

**Amendments to the Specification:**

Please amend the specification by entering the enclosed Sequence Listing.

Please replace the paragraph on page 2, lines 18-23, with the following paragraph:

Thus, a first aspect of the present invention describes a polypeptide immunogen comprising an amino acid sequence at least 85% identical to SEQ ID NO: 1, wherein the polypeptide does not contain a carboxyl terminus provided by amino acids 261-294 of SEQ ID NO: 7 and the polypeptide provides protective immunity against *S. aureus*. SEQ ID NO: 7 provides a full length sai-1 polypeptide, wherein amino acids 261-294 provide the carboxyl terminus domain starting at the LPXTG (SEQ ID NO: 20) motif.

Please replace the paragraph on page 2, lines 26-29, with the following paragraph:

Reference to comprising an amino acid sequence at least 85% identical to SEQ ID NO: 1 indicates that a SEQ ID NO: 1 related region is present and additional polypeptide regions may be present. If additional polypeptide regions are present, then the polypeptide does not have a carboxyl LPXTG (SEQ ID NO: 20) motif as provided by amino acids 261-294 of SEQ ID NO: 7.

Please replace the paragraph on page 5, lines 5-13, with the following paragraph:

Figures 6A and 6B show an exemplary Coomassie COOMASSIE stain of an SDS-PAGE gel and a Western blot, respectively, comparing intracellular expression from nucleic acid encoding SEQ ID NO: 1 related proteins. The Western blot was probed using an anti-his antibody. Lanes- 1, Purified SEQ ID NO: 3 (100 ng); 2, SEQ ID NO: 3 *E. coli* crude lysate (with induction); 3, SEQ ID NO: 3 *E. coli* crude lysate (no induction); 4, SEQ ID NO: 5 *E. coli* crude lysate (with induction); 5, SEQ ID NO: 5 *E. coli* crude lysate (no induction); 6, SEQ ID NO: 6 *E. coli* crude lysate (with induction); 7, SEQ ID NO: 6 *E. coli* crude lysate (no induction); 8, SEQ ID NO: 9 *E. coli* crude lysate (with induction); 9, SEQ ID NO: 9 *E. coli* crude lysate (no induction); 10, Standard.

Please replace the paragraph on page 5, lines 22-26, with the following paragraph:

SEQ ID NO: 1 was produced based on a full length transferrin binding protein by modifying the encoding nucleic acid to remove the amino signal sequence, to remove a carboxyl hydrophobic region, to add an amino terminus methionine, and to add a restriction site to the amino terminus. The removed hydrophobic region followed a LPXTG (SEQ ID NO: 20) motif. The addition of the amino terminus restriction site resulted in a Serine to Glycine substitution.

Please replace the paragraph on page 16, lines 4-14, with the following paragraph:

*E. coli* HMS174(DE3) cells (Novagen) were transformed and grown on LB plates containing kanamycin (30ug/ml); 3 colonies were selected for expression testing. Liquid LB (kanamycin) cultures were incubated at 37°C, 250 rpm until the  $A_{600}$  was between 0.6 and 1.0 and then induced by the addition of IPTG to final concentrations of 1 mM followed by three hours further incubation. Cultures were harvested by centrifugation at 5000 x g for 5 minutes at 4°C. Cells were resuspended in 500  $\mu$ l lysis buffer (~~Bug Buster~~ BUG BUSTER, with protease inhibitors, Novagen). An equal volume of loading buffer (supplemented with  $\beta$ -mecapto ethanol to 5% final volume) was added prior to heating the samples at 70°C for 5 minutes. Extracts were run on Novex 4-20% Tris-Glycine gels and assayed for protein (~~Coomassie Blue~~ COOMASSIE BLUE stained) and blotted onto nitrocellulose and probed with anti-HIS6 antibodies (Zymed). The expression observed was extremely low.

Please replace the paragraph on page 16, lines 15-17, with the following paragraph:

The protein was re-analyzed; a putative signal sequence was removed as was the downstream region from the LPXTG (SEQ ID NO: 20) motif. These PCR primers also had additional NdeI (forward primer) and XhoI (reverse primer) sites to facilitate cloning into the expression vector.

Please replace the paragraph on page 17, lines 3-12, with the following paragraph:

*E. coli* HMS174(DE3) cells (Novagen) were transformed and grown on LB plates containing kanamycin (30ug/ml); 3 colonies were selected for expression testing. Liquid LB (kanamycin) cultures were incubated at 37°C, 250 rpm until the A<sub>600</sub> was between 0.6 and 1.0 and then induced by the addition of IPTG to final concentrations of 1 mM followed by three hours further incubation. Cultures were harvested by centrifugation at 5000 x g for 5 minutes at 4°C. Cells were resuspended in 500 µl lysis buffer (~~Bug Buster~~ BUG BUSTER, with protease inhibitors, Novagen). An equal volume of loading buffer (supplemented with β-mecapto ethanol to 5% final volume) was added prior to heating the samples at 70°C for 5 minutes. Extracts were run on Novex 4-20% Tris-Glycine gels and assayed for protein (~~Coomassie Blue~~ COOMASSIE BLUE stained) and blotted onto nitrocellulose and probed with anti-HIS6 antibodies (Zymed).

Please replace the paragraph on page 17, line 30 to page 18, line 2, with the following paragraph:

Fractions containing SEQ ID NO: 3 polypeptide were detected by ~~Coomassie COOMASSIE~~ stained SDS-PAGE and pooled. Pooled fractions were filtered through a 0.2 micron filter to remove particulate material, and were applied on a size-exclusion column (Sephadryl SEPHACRYL S-300 26/60 column, Amersham Biosciences) and eluted at 1 mL/min with 30 mM MOPS pH 7.0, 0.3 M NaCl, and 10% glycerol. Fractions containing SEQ ID NO: 3 polypeptide were detected by ~~Coomassie~~ COOMASSIE stained SDS-PAGE and Western blotting (anti-tetra His Mab, Qiagen). Protein was determined by BCA (Pierce). Purity was determined by densitometry of COOMASSIE ~~Coomassie~~-stained gels.

Please replace the paragraph on page 18, lines 5-9, with the following paragraph:

*S. aureus* was grown on TSA plates at 37°C overnight. The bacteria were washed from the TSA plates by adding 5 ml of PBS onto a plate and gently resuspending the bacteria with a sterile spreader. The bacterial suspension was spun at 6000 rpm for 20 minutes using a ~~Sorvall~~

SORVALL RC-5B centrifuge (DuPont Instruments). The pellet was resuspended in 16% glycerol and aliquots were stored frozen at -70°C.

Please replace the paragraph on page 18, line 33 to page 19, line 5, with the following paragraph:

Figures 6A and 6B show an exemplary ~~Coomassie~~ COOMASSIE stain of an SDS-PAGE gel and a Western blot, respectively, comparing intracellular expression from nucleic acid encoding SEQ ID NO: 1 related proteins. The Western blot was probed using an anti-his antibody. Lanes- 1, Purified SEQ ID NO: 3 (100 ng); 2, SEQ ID NO: 3 *E. coli* crude lysate (with induction); 3, SEQ ID NO: 3 *E. coli* crude lysate (no induction); 4, SEQ ID NO: 5 *E. coli* crude lysate (with induction); 5, SEQ ID NO: 5 *E. coli* crude lysate (no induction); 6, SEQ ID NO: 6 *E. coli* crude lysate (with induction); 7, SEQ ID NO: 6 *E. coli* crude lysate (no induction); 8, SEQ ID NO: 9 *E. coli* crude lysate (with induction); 9, SEQ ID NO: 9 *E. coli* crude lysate (no induction); 10, Standard.